

TYPE-S SUBWOOFER
HAUT-PARLEUR D'EXTRÊMES GRAVES TYPE-S
APPLICATION GUIDE
GUIDE D' APPLICATION

SWS-1243D

12 Inch Dual Voice Coil Subwoofer (4Ω)+(4Ω)
Haut-parleur d'extrêmes graves à double bobine 12 po (4Ω)+(4Ω)

SWS-1223D

12 Inch Dual Voice Coil Subwoofer (2Ω)+(2Ω)
Haut-parleur d'extrêmes graves à double bobine 12 po (2Ω)+(2Ω)

SWS-1043D

10 Inch Dual Voice Coil Subwoofer (4Ω)+(4Ω)
Haut-parleur d'extrêmes graves à double bobine 10 po (4Ω)+(4Ω)

SWS-1023D

10 Inch Dual Voice Coil Subwoofer (2Ω)+(2Ω)
Haut-parleur d'extrêmes graves à double bobine 10 po (2Ω)+(2Ω)

Caractéristiques et spécifications Caractéristiques		Type-S SWS-1023D	Type-S SWS-1043D	Type-S SWS-1223D	Type-S SWS-1243D
Features					
Taille		10 po	10 po	12 po	12 po
Puissance admissible (efficace/de crête)		300W/900W	300W/900W	300W/900W	300W/900W
Plage de puissance (efficace)		50W-300W	50W-300W	50W-300W	50W-300W
Réponse en fréquence (Hz)		30Hz-700Hz	31Hz-700Hz	27Hz-700Hz	28Hz-700Hz
Membrane	Matériau	Cone parabolique en fibre de verre et Pâte de Kevlar			
	Conception	1 pièce, parabolique			
Suspension	Matériau	Santoprene^{MD} injecté			
	Conception	Déplacement élevé, effilée, demi-bourrelet			
Centreur	Matériau	Nomex^{MD}			
	Conception	Progressif			
Bobine	Matériau	Fil résistant jusqu'à 180˚C, forme de fibre de verre (TIL)			
	Conception	4 couches, double bobine			
Moteur	Géométrie de pièce polaire	Courbe complexe **(brevet n° 6,639,993)**			
	Configuration	Pièce polaire allongée à event à double évasement			
Bâti	Matériau	Acier fort			
	Conception	Ventilation périphérique **(brevet en instance)**			
Bornes	Répartition	Un côté			
	Conception	Solide, calibre 8, à pression, cavalier à fiche banane			
Fils conducteurs	Conception	Intégrés au centreur, couche renforcée **(brevet n° 6,810,988)**			
Joint d'étanchéité	Conception	Joint d'étanchéité couvre-vis			
Enceinte					
Profondeur de montage		110 mm (4.3po)	110 mm (4.3po)	127 mm (5po)	127 mm (5po)
Diamètre de montage - montage avant		244 mm (9.6po)	244 mm (9.6po)	289 mm (11.4po)	289 mm (11.4po)
Déplacement - montage avant**		0.050 pi^3	0.050 pi^3	0.084 pi^3	0.084 pi^3
Volume ajouté - montage inversé**		0.055 pi^3	0.055 pi^3	0.082 pi^3	0.082 pi^3
Types d'enceintes recommandés		close, évent, passe-bande			
Volume d'enceinte close (brut)		0.65-1.5 pi^3	0.65-1.5 pi^3	0.85-1.5 pi^3	0.85-1.5 pi^3
Enceinte close optimale	Dimensions extérieures	14 po x 14 po x 12-1/2 po	14 po x 14 po x 12-1/2 po	15-1/2 po x 15-1/2 po x 12-1/2 po	15-1/2 po x 15-1/2 po x 12-1/2 po
	Volume intérieur brut	1.0 pi^3	1.0 pi^3	1.25 pi^3	1.25 pi^3
	Volume intérieur net***	0.95 pi^3	0.95 pi^3	1.17 pi^3	1.17 pi^3
	F_3, Qtc	43Hz, 0.78	42Hz, 0.84	43Hz, 0.86	43Hz, 0.86
Volume d'enceinte à évent (brut)		1.0-1.75 pi^3	1.0-1.75 pi^3	1.25-2.0 pi^3	1.25-2.0 pi^3
Enceinte à évent optimale	Dimensions extérieures	11-1/2 po x 15-1/2 po x 16-1/2 po	11-1/2 po x 15-1/2 po x 16-1/2 po	13-1/2 po x 17-1/2 po x 15-1/2 po	13-1/2 po x 17-1/2 po x 15-1/2 po
	Volume intérieur brut	1.2 pi^3	1.2 pi^3	1.55 pi^3	1.55 pi^3
	Aire de l'évent (dimensions)	10 in^2 (10 po x 1 po)	10 in^2 (10 po x 1 po)	12 in^2 (12 po x 1 po)	12 in^2 (12 po x 1 po)
	Longueur de l'évent	14 po	14 po	17 po	17 po
	Déplacement de l'évent	0.14pi^3	0.14pi^3	0.21pi^3	0.21pi^3
	Volume intérieur net (V_b)***	1.0 pi^3	1.0 pi^3	1.3 pi^3	1.3 pi^3
	F_3, crête, F_b	33 Hz, 5.6 dB, 40Hz	33 Hz, 5.8 dB, 40Hz	35 Hz, 4.7 dB, 35Hz	35 Hz, 4.7 dB, 35Hz
Paramètres électromécaniques#					
Impédance nominale		$2\Omega+2\Omega$	$4\Omega+4\Omega$	$2\Omega+2\Omega$	$4\Omega+4\Omega$
Réponse en fréquence		30 - 700Hz	30 - 700Hz	27 - 700Hz	28 - 700Hz
Sensibilité (NPA @ 1 W / 1 m)*		84 dB	84dB	86 dB	86 dB
Résistance CC de la bobine (Re)		$1.8\Omega+1.8\Omega$	$3.2\Omega+3.2\Omega$	$1.8\Omega+1.8\Omega$	$3.2\Omega+3.2\Omega$
Inductance (Le) 1 kHz / 20 kHz		3.11mH / 1.09mH	4.40mH / 1.59mH	2.67mH / 1.02mH	3.95mH / 1.47mH
Résonance à l'air libre (Fs)		33Hz	34Hz	30Hz	31Hz
Raideur équivalente (Vas)		30L (1.1 pi^3)	30L (1.1 pi^3)	61L (2.2 pi^3)	61L (2.2 pi^3)
Q mécanique (Qms)		13.42	13.89	12.64	12.92
Q électrique (Qes)		0.65	0.71	0.63	0.69
Q total (Qts)		0.62	0.68	0.60	0.66
Déplacement linéaire [(Hvc-Hag)/2)], un sens (Xmax)		12.9mm	12.8 mm	12.9 mm	12.8 mm
Déplacement linéaire magnétique, un sens (Xmag)		14 mm	14.2 mm	14 mm	14.2 mm
Déplacement mécanique, crête à crête		44 mm	44 mm	52 mm	52 mm
Hauteur de l'écartement (Hag)		8 mm	8 mm	8 mm	8 mm
Hauteur de la bobine (Hvc)		33.8 mm	33.5 mm	33.8 mm	33.5 mm
Surface du diaphragme (Sd)		330 cm^2	330 cm^2	485 cm^2	485 cm^2
Diamètre de la bobine		38 mm (1.5 po)	38 mm (1.5 po)	38 mm (1.5 po)	38 mm (1.5 po)
Poids de l'aimant		52.9 oz	52.9 oz	74.2 oz	74.2 oz

Notes:

Remarque : Les spécifications peuvent changer sans préavis.

Paramètres T/S mesurés/calculés avec bobines reliées en série, après rodage.

* Ne pas utiliser cette spécification souvent mal comprise comme référence pour la puissance du haut-parleur d'extrêmes graves.

** Panneau de 0,75 po (19 mm) d'épaisseur, ouverture correspondant environ au diamètre intérieur du joint d'étanchéité.

Subwoofer Features and Specifications		SWS-1023D (Type-S)	SWS-1043D (Type-S)	SWS-1223D (Type-S)	SWS-1243D (Type-S)
Features					
Size		10"	10"	12"	12"
Power Handling (RMS/peak)		300W/900W	300W/900W	300W/900W	300W/900W
Power Range (RMS)		50W-300W	50W-300W	50W-300W	50W-300W
Frequency Response (Hz)		30Hz-700Hz	31Hz-700Hz	27Hz-700Hz	27Hz-700Hz
Diaphragm	Material	Glass Fiber w/ Kevlar Reinforced Pulp Fiber			
	Design	1-piece Parabolic			
Surround	Material	Injection Molded Santoprene®			
	Design	High Excursion Tapered Half-Roll			
Spider	Material	Nomex®			
	Design	Progressive			
Voice Coil	Material	180˚C High Temp Wire on Glass Fiber (TIL) Former			
	Design	4-Layer Dual Voice Coil			
Motor Structure	Pole Geometry	Compound Radius Curve **(Patent #6,639,993)**			
	Configuration	Airflow Optimized Extended/Vented Pole			
Frame	Material	Custom High Strength Steel			
	Design	Perimeter Vented **(Pat. Pending)**			
Terminals	Layout	One Side			
	Design	Heavy Duty 8ga. Push, Banana Plug Jumper			
Tinsel Leads	Design	Reinforced Layer Spider Integration **(Patent #6,810,988)**			
Gasket	Design	Concealed Mount Gasket System			
Enclosure Information					
Mounting Depth		110 mm (4.3")	110 mm (4.3")	127 mm (5")	127 mm (5")
Mounting Diameter - Front Mount		244 mm (9.6")	244 mm (9.6")	289 mm (11.4")	289 mm (11.4")
Displacement - Front Mount**		0.050 ft^3	0.050 ft^3	0.084 ft^3	0.084 ft^3
Added Volume - Reverse Mount (magnet out)**		0.055 ft^3	0.055 ft^3	0.082 ft^3	0.082 ft^3
Recommended Enclosure Alignments		Sealed, Vented, Bandpass			
Sealed Box Volume Range (Gross)		0.65-1.5 ft^3	0.65-1.5 ft^3	0.85-1.5 ft^3	0.85-1.5 ft^3
Optimum Sealed Box	External Box Dimensions	14" x 14" x 12-1/2"	14" x 14" x 12-1/2"	15-1/2" x 15-1/2" x 12-1/2"	15-1/2" x 15-1/2" x 12-1/2"
	Gross Internal Volume	1.0 ft^3	1.0 ft^3	1.25 ft^3	1.25 ft^3
	Net Internal Volume**	0.95 ft^3	0.95 ft^3	1.17 ft^3	1.17 ft^3
	F_3,Q_{tc}	43Hz, 0.78	42Hz, 0.84	43Hz, 0.86	42Hz, 0.93
Vented Box Volume Range (Gross)		1.0-1.75 ft^3	1.0-1.75 ft^3	1.25-2.0 ft^3	1.25-2.0 ft^3
Optimum Vented Box	External Box Dimensions	11-1/2" x 15-1/2" x 16-1/2"	11-1/2" x 15-1/2" x 16-1/2"	13-1/2" x 17-1/2" x 15-1/2"	13-1/2" x 17-1/2" x 15-1/2"
	Gross Internal Volume	1.2 ft^3	1.2 ft^3	1.55 ft^3	1.55 ft^3
	Vent Area (dimensions)	10 in^2 (10" x 1")	10 in^2 (10" x 1")	12 in^2 (12" x 1")	12 in^2 (12" x 1")
	Vent Length	14"	14"	17"	17"
	Vent Displacement	0.14ft^3	0.14ft^3	0.21ft^3	0.21ft^3
	Net Internal Volume (V_b)**	1.0 ft^3	1.0 ft^3	1.3 ft^3	1.3 ft^3
	F_3,ripple, F_b	33 Hz, 5.6 dB, 40Hz	33 Hz, 5.8 dB, 40Hz	35 Hz, 4.7 dB, 35Hz	35 Hz, 5.2 dB, 35Hz
Electro-Mechanical Parameters#					
Nominal Impedance		2Ω+2Ω	4Ω+4Ω	2Ω+2Ω	4Ω+4Ω
Frequency Response		30 - 700Hz	31 - 700Hz	27 - 700Hz	27 - 700Hz
Sensitivity (SPL@1W/1m)*		84 dB	84 dB	86 dB	86 dB
D.C Coil Resistance (Re)		1.8Ω+1.8Ω	3.2Ω+3.2Ω	1.8Ω+1.8Ω	3.2Ω+3.2Ω
Inductance (Le) 1kHz/20kHz		3.11mH / 1.09mH	4.40mH / 1.59mH	2.67mH / 1.02mH	3.95mH / 1.47mH
Free Air Resonance (Fs)		33Hz	34Hz	30Hz	31Hz
Equivalent Stiffness (Vas)		30L (1.1 ft^3)	30L (1.1 ft^3)	61L (2.2 ft^3)	61L (2.2 ft^3)
Mechanical Q (Qms)		13.42	13.89	12.64	12.92
Electrical Q (Qes)		0.65	0.71	0.63	0.69
Total Q (Qts)		0.62	0.68	0.60	0.66
Linear Excursion [(Hvc-Hag)/2)], One-Way (Xmax)		12.9 mm	12.8 mm	12.9 mm	12.8 mm
Magnetic Linear Excursion, One-Way (Xmag)		14 mm	14.2 mm	14 mm	14.2 mm
Mechanical Excursion, Peak-to-Peak		44 mm	44 mm	52 mm	52 mm
Gap Height (Hag)		8 mm	8 mm	8 mm	8 mm
Coil Height (Hvc)		33.8 mm	33.5 mm	33.8 mm	33.5 mm
Cone Area (Sd)		330 cm^2	330 cm^2	485 cm^2	485 cm^2
Voice Coil Diameter		38 mm (1.5")	38 mm (1.5")	38 mm (1.5")	38 mm (1.5")
Magnet Weight		52.9 oz	52.9 oz	74.2 oz	74.2 oz

Note: All specifications are subject to change without notice

All T/S parameters measured/calculated with voice coils connected in series, after break-in.

* This commonly misunderstood specification should not be used as a reference for subwoofer output capability.

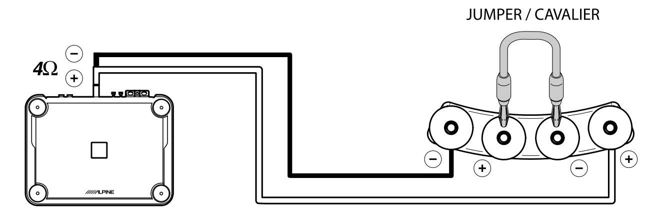
** Based upon 3/4" (19mm) baffle thickness, with opening cut approximately to gasket inner diameter



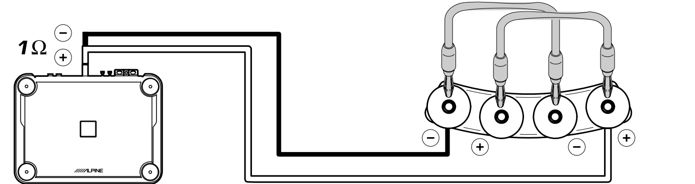
DUAL 2 Ω TYPE-S APPLICATION DIAGRAMS
SCHÉMAS D'APPLICATION - TYPE-S, DOUBLE BOBINE, 2 Ω

SWS-1023D / SWS-1223D

Example 1 One Amplifier and One Subwoofer
Exemple 1 1 amplificateur et 1 h.-p. d'extrêmes graves



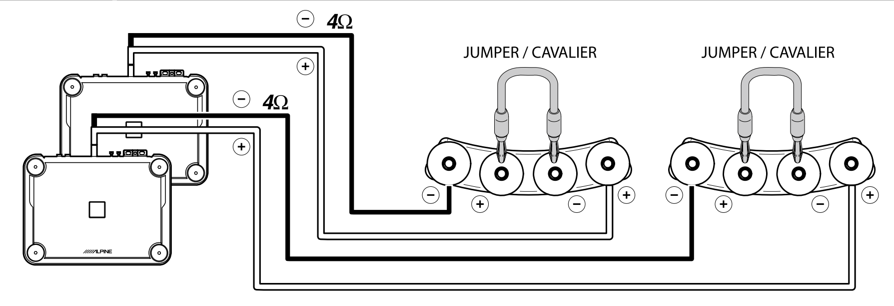
Example 2 One Amplifier and One Subwoofer
Exemple 2 1 amplificateur et 1 h.-p. d'extrêmes graves



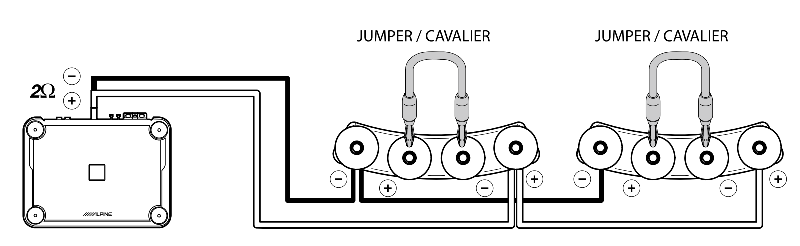
Caution ! Consult amplifier owner's manual for 1Ω connection.
Attention : lire le manuel de l'amplificateur pour la connexion à 1Ω .

Example 3 Two Amplifiers and Two Subwoofers
Exemple 3 2 amplificateurs et 2 h.-p. d'extrêmes graves

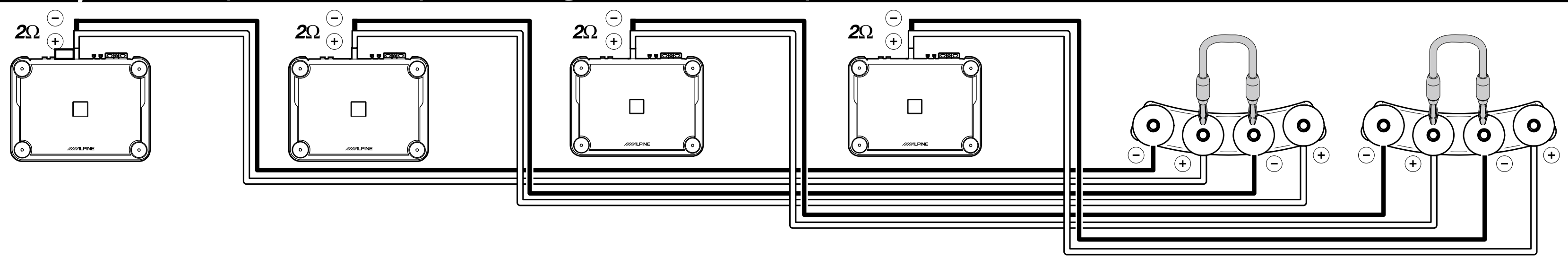


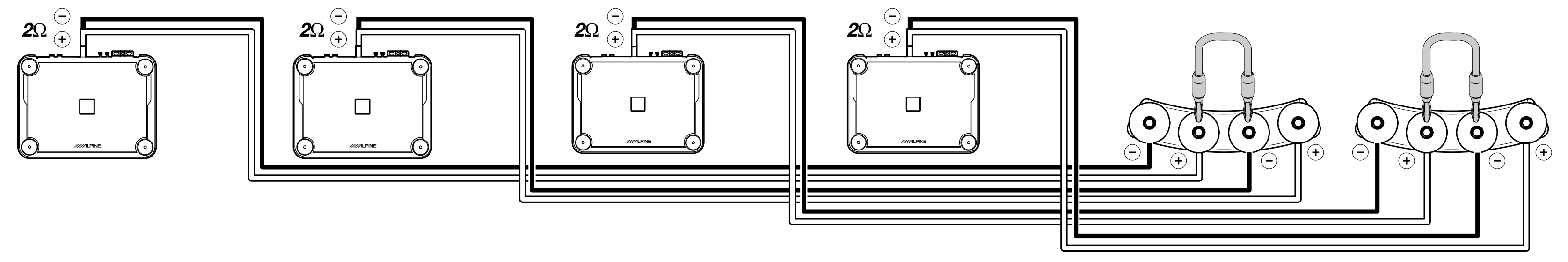


Example 4 One Amplifier and Two Subwoofers
Exemple 4 1 amplificateur et 2 h.-p. d'extrêmes graves



Example 5 Eight Amplifiers and Four Subwoofers-Competition Diagram
Exemple 5 8 amplificateurs et 4 h.-p. d'extrêmes graves - schéma de compétition



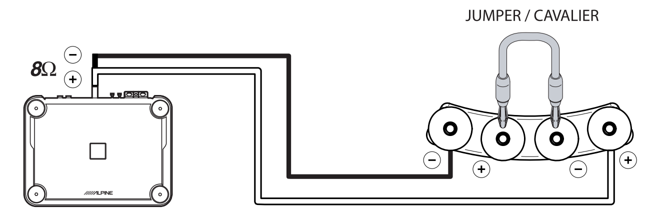




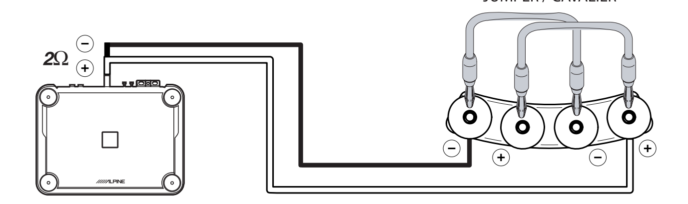
DUAL 4 Ω TYPE-S APPLICATION DIAGRAMS
SCHÉMAS D'APPLICATION - TYPE-S, DOUBLE BOBINE, 4 Ω

SWS-1043D / SWS-1243D

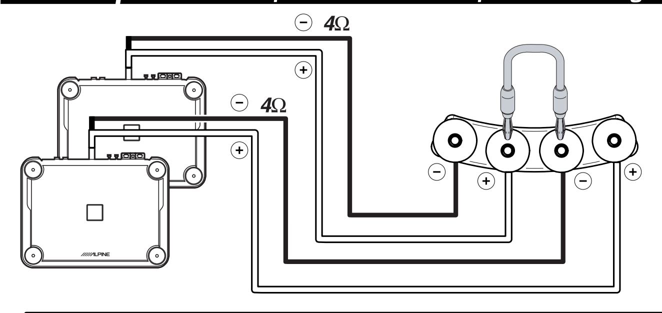
Example 1 One Amplifier and One Subwoofer
Exemple 1 1 amplificateur et 1 h.-p. d'extrêmes graves



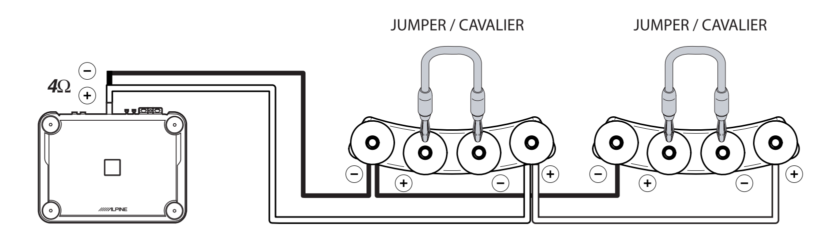
Example 2 One Amplifier and One Subwoofer
Exemple 2 1 amplificateur et 1 h.-p. d'extrêmes graves



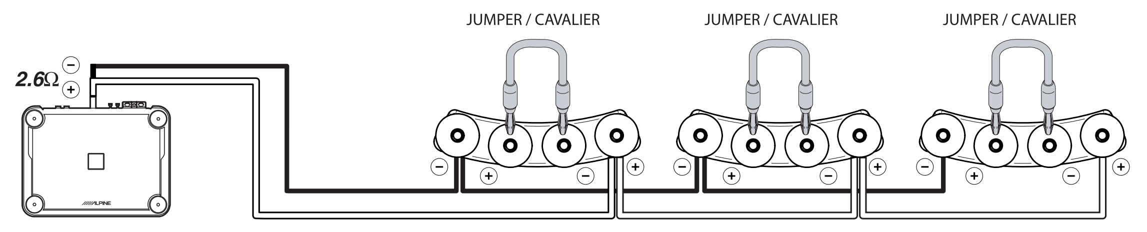
Example 3 Two Amplifiers and One Subwoofer
Exemple 3 2 amplificateurs et 1 h.-p. d'extrêmes graves



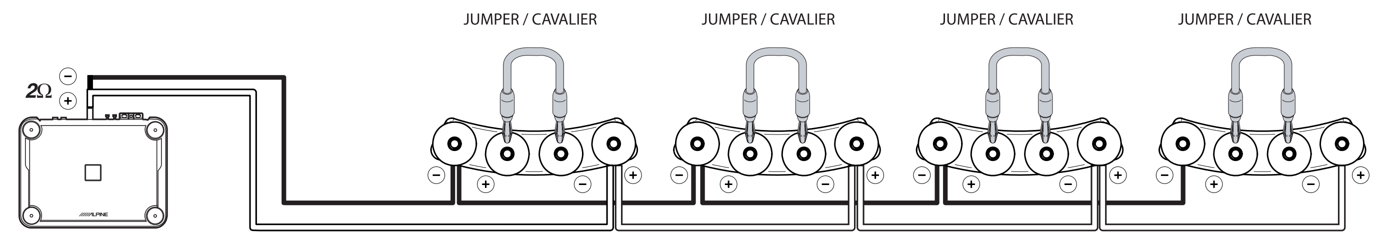
Example 4 One Amplifier and Two Subwoofers
Exemple 4 1 amplificateur et 2 h.-p. d'extrêmes graves

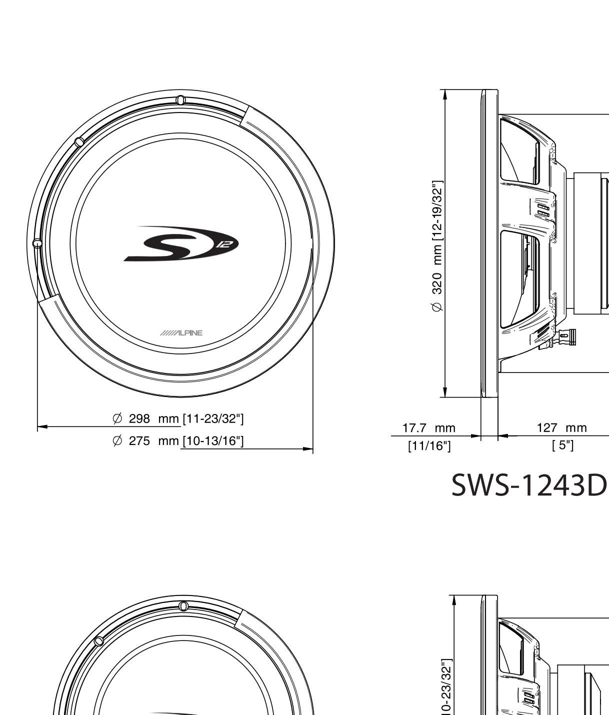


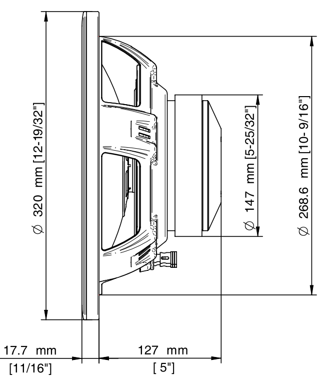
Example 5 One Amplifier and Three Subwoofers
Exemple 5 1 amplificateur et 3 h.-p. d'extrêmes graves



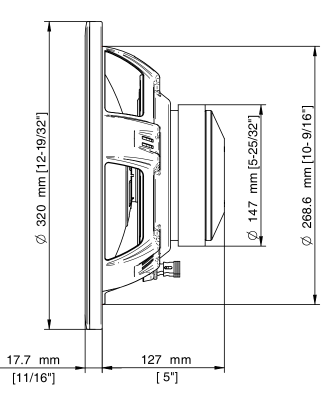
Example 6 One Amplifier and Four Subwoofers
Exemple 6 amplificateur et 4 h.-p. d'extrêmes graves



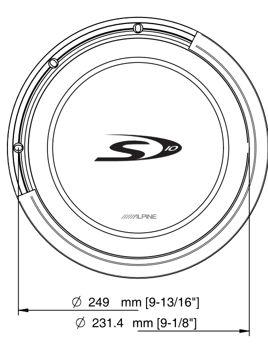


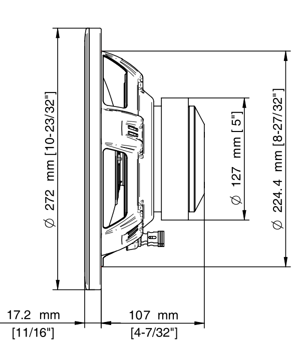


SWS-1243D



SWS-1223D





SWS-1043D

∅ 272 mm [10-23/32"]
∅ 127 mm [5"]
∅ 224.4 mm [8-27/32"]
17.2 mm
[11/16"]
107 mm
[4-7/32"]

SWS-1023D

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